

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-029953**Date Inspected:** 22-Aug-2013**Project Name:** SAS Superstructure**OSM Arrival Time:** 1530**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 100**Contractor:** Steward Machine Co.**Location:** Birmingham, AL**CWI Name:** Fred Hudson**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** E2 Shear Key Anchorages**Summary of Items Observed:**

Quality Assurance Inspector (QAI) Andrew Webster was present on the date and times noted above in order to observe the fabrication and Quality Control (QC) functions performed by Steward Machine Company for the E2 Shear Key Anchorages for the SFOBB project. Material Test Reports (MTRs) for all materials used have been reviewed and approved by others at the XKT shop in Vallejo California prior to shipping to Steward Machine Company. The following items were observed:

**Steward Machine - Plant 1:**

The QA performed a walkthrough at the shop to verify plates on site and to observe Steward Machine personnel at work machining and welding. Work performed at the Steward Machine shop as noted below:

CNC Machine #176 milling plate S4C-h4. (Milling outside radius); (moved to floor at 2200)

CNC Machine #177 empty. (Offline)

CNC Machine #211 milling plate S4C-c4 (Milling inside radius)

CNC Machine #225 milling plate S3C-c3. (Milling inside radius); (offline at 1600)

CNC Machine #230 milling plate S10C-a1. (Milling inside radius)

CNC Machine #240 milling plate S4B-d4. (Milling inside radius)

CNC Machine #245 milling plate S3B-g3. (Offline)

CNC Machine #176 milling plate S3C-g3. (Milling outside radius); (moved from floor at 2200)

The following plates were noted staged throughout the shop in various stages of processing.

Bay 1 – Plates:

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S3B-f3. Formed, stressed relieved and partially machined.

S3C-f3. Formed, stressed relieved and partially machined.

S4B-f4. Formed, stressed relieved and partially machined.

S4C-f4. Formed, stressed relieved and partially machined.

### Bay 2 – Plates:

S3C-g3. Formed, stressed relieved and partially machined. (moved to machine #176)

S3B-h3. Formed, stressed relieved and partially machined.

S4C-h4. Formed, stressed relieved and partially machined. (moved from machine #176)

S4B-h4. Formed, stressed relieved and partially machined.

### Bay 3 – Plates:

S10C-d1. Formed, stressed relieved and partially machined.

S3B-e3. Formed, stressed relieved and partially machined.

S4B-e4. Formed, stressed relieved and partially machined.

S3C-e3. Formed, stressed relieved and partially machined.

S4C-e4. Formed, stressed relieved and partially machined.

S3C-a3. Formed, stressed relieved and partially machined.

### Bay 4 – Plates:

S10C-a2. Formed, stressed relieved and partially machined.

S10C-b1. Formed, stressed relieved and partially machined.

S10C-b2. Formed, stressed relieved and partially machined.

S10C-c1. Formed, stressed relieved and partially machined.

S4C-a4. Formed, stressed relieved and partially machined.

S3B-a3. Formed, stressed relieved and partially machined.

S3B-b3. Formed, stressed relieved and partially machined.

S3C-d3. Formed, stressed relieved and partially machined.

S3C-b3. Formed, stressed relieved and partially machined.

S3C-h3. Formed, stressed relieved and partially machined.

S4C-d4. Formed, stressed relieved and partially machined.

S3B-c3. Formed, stressed relieved and partially machined.

S4B-a4. Formed, stressed relieved and partially machined.

S4B-b4. Formed, stressed relieved and partially machined.

S4B-c4. Formed, stressed relieved and partially machined.

S4B-g4. Formed, stressed relieved and partially machined.

### Welding Jig Bay 4 – Plates:

S10B-a1. Formed, stressed relieved, machined and blasted.

S10B-a2. Formed, stressed relieved and machined.

S10B-c1. Formed, stressed relieved, machined and blasted.

S10B-b1. Formed, stressed relieved, machined and blasted.

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S10B-b2. Formed, stressed relieved, machined and blasted.

S10B-d1. Formed, stressed relieved, machined and blasted.

This QA inspector noted the welding of the above mentioned plates in the welding jig. The welding carried over from the day shift. The welding was done by qualified welders Daniel Rowe and Jeffery Hennington. The welding was done to the approved welding procedure (WPS) P2-W128-B. All welding done at the time of this inspector's arrival was monitored by Certified Welding Inspector (CWI) Fred Hudson. The welding finished up at 1630.

MT on ground tacks:

S3B-e3. Formed, stressed relieved and partially machined.

S4B-e4. Formed, stressed relieved and partially machined.

S3C-e3. Formed, stressed relieved and partially machined.

S4C-e4. Formed, stressed relieved and partially machined.

This QA inspector witnessed QC inspector Cory Cardwell perform 100% MT on the above listed plates followed by this QA inspector doing 10% MT verification on the tack areas that had previously been ground. All MT was found to be acceptable at this time. See report form TL-6028 for further information.

Hardie Tynes:

The QA performed a walkthrough at the shop to verify plates on site and to observe Hardie Tynes personnel at work machining plates. Work performed at the shop as noted below:

It was noted by this QA inspector that there was no work being performed for this job at Hardie Tynes. This QA inspector confirmed with the machine operators that no work would be done for this project this evening.

The following plates were noted staged throughout the shop in various stages of processing.

S4C-b4. Formed, stressed relieved and partially machined.

S3B-d3. Formed, stressed relieved and partially machined.



### Summary of Conversations:

Conversations per contract specifications.

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### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Gary Thomas 916-764-6027, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Webster,Andrew
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Quality Assurance Inspector
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<b>Reviewed By:</b>	Foerder,Mike
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QA Reviewer
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